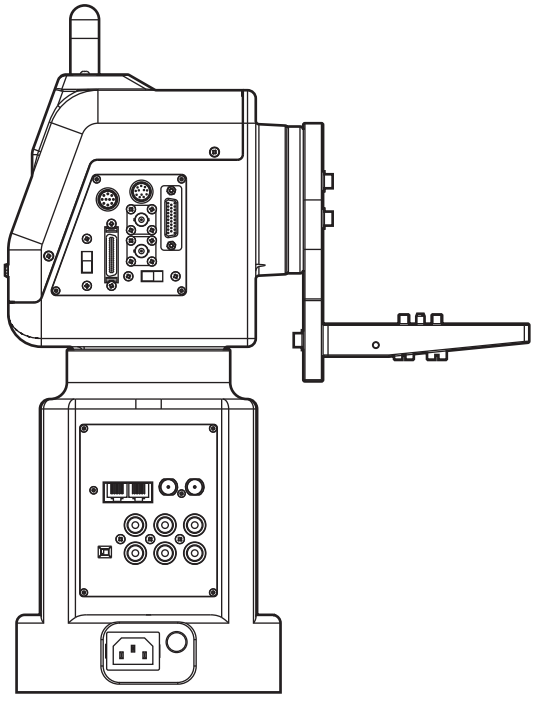
Panasonic

Operating Instructions

Indoor Pan-tilt Head

Model No. AW-PH405N



Before operating this product, please read the instructions carefully and save this manual for future use.

Printed in Japan
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VQTB0150

Safety precautions

CAUTION
RISK OF ELECTRIC SHOCK DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER SERVICEABLE PARTS INSIDE.
REFER TO SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (service) instructions in the literature accompanying the appliance.

For CANADA

This class A digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

WARNING:

- **TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE.**
- **THE APPARATUS SHALL NOT BE EXPOSED TO DRIPPING OR SPLASHING AND THAT NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHALL BE PLACED ON THE APPARATUS.**

WARNING:

TO PREVENT INJURY, THIS APPARATUS MUST BE SECURELY ATTACHED TO THE FLOOR/WALL IN ACCORDANCE WITH THE INSTALLATION INSTRUCTIONS.

CAUTION:

TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD AND ANNOYING INTERFERENCE, USE THE RECOMMENDED ACCESSORIES ONLY.

FCC Note:
This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Warning:
To assure continued FCC emission limit compliance, the user must use only shielded interface cables when connecting to external units. Also, any unauthorized changes or modifications to this equipment could void the user's authority to operate it.

CAUTION:

TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, REFER CHANGES OF SWITCH SETTINGS INSIDE THE UNIT TO QUALIFIED SERVICE PERSONNEL.

CAUTION:

In order to maintain adequate ventilation, do not install or place this unit in a bookcase, built-in cabinet or any other confined space. To prevent risk of electric shock or fire hazard due to overheating, ensure that curtains and any other materials do not obstruct the ventilation.

The socket outlet shall be installed near the equipment and easily accessible or the mains plug or an appliance coupler shall remain readily operable.

A warning that an apparatus with CLASS I construction shall be connected to a MAINS socket outlet with a protective earthing connection.

▭ indicates safety information.

IMPORTANT SAFETY INSTRUCTIONS

Read these operating instructions carefully before using the unit. Follow the safety instructions on the unit and the applicable safety instructions listed below. Keep these operating instructions handy for future reference.

1) Read these instructions.
2) Keep these instructions.
3) Heed all warnings.
4) Follow all instructions.
5) Do not use this apparatus near water.
6) Clean only with dry cloth.
7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10) Protect the power cord form being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11) Only use attachments/accessories specified by the manufacturer.
12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/ apparatus combination to avoid injury from tip-over.

13) Unplug this apparatus during lightning storms or when unused for long periods of time.
14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

▭ indicates safety information.

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Operating precautions

- **Handle the unit carefully.**
  Dropping the unit or subjecting it to strong impact may give rise to malfunctioning or accidents.
- **Turn off the power before connecting or disconnecting the cables.**
  Be absolutely sure to turn off the power before connecting or disconnecting the cables.
- **Install the unit near the main power outlet, and position it in such a way that its power plug can be plugged into and unplugged from the outlet easily.**
- **Do not use the unit outdoors.**
- **Maintenance**
  Wipe the unit using a dry cloth. To remove stubborn dirt, dip a cloth into a diluted solution of kitchen detergent, wring it out well, and wipe the unit gently.

  <Caution>
  - Avoid using benzine, paint thinners and other volatile fluids.
  - If a chemical cleaning cloth is to be used, carefully read through the precautions for its use.

Introduction

- The stand-alone indoor pan-tilt head can be rotated through 300 degrees in the vertical direction and 300 degrees in the horizontal direction.
- Operations can be performed at high speeds of up to 45 degrees per second.
- Equipment such as a camera and lens with a total weight of 33.1 lbs (15 kg) can be mounted on the unit.
- The shooting positions and settings for up to 50 positions can be registered as preset memory data.

- **When the AW-IF400 is used to connect the AW-RP400 to the unit**
  - The tracing memory function cannot be used.
  - TILT RANGE cannot be set.
  - MEMORY LENGTH cannot be set.
  - DIAGONAL MOTION cannot be set to ON or OFF.
  - Backlash cannot be compensated.
  - When the ON/OFF setting of auto focus (AF) and extender (EXT) is switched from AW-RP400, use the OPTION SW after allocating the “EXT” function to it.

- **When using the IAS, WAS or VAS lens made by Canon or the RD lens made by Fujinon**
  - Communication with the pan-tilt head controller (such as the AW-RP655) commences as soon as the AW-PH405 is started. Similarly, the startup process for the lens commences when the power of the camera is turned on. During the startup process the zoom moves automatically, and none of the control operations can be performed from the pan-tilt head controller (such as the AW-RP655).
  - After completion of the startup process, refrain from adjusting the zoom speed control of the lens. To adjust this speed, turn off the power of the AW-PH405 first, and then proceed with the adjustment.
  - When the zoom offset automatic compensation selector switch of the lens is set to ON, the zoom position will be automatically compensated. For this reason, the zoom seesaw switch of the lens cannot be used to control the zoom in the desired manner.
  - When the lens mounted on the camera has been changed, re-set the preset memory and tracing memory functions. The zoom will not operate properly if the original settings for these functions are retained for use.

Notes
- The AW-PH405 cannot be controlled from the AW-RP301, AW-RP305, AW-RP501, AW-RP505 controller.
- The AW-RL400 roll unit cannot be used.
- The current rating of the LENS I/F (2) connector is 500 mA (max).
  The lens whose maximum current consumption exceeds 500 mA cannot be used. Concerning the maximum current consumption of the lens, contact the lens manufacturer.
- In order to protect the environment when the pan-tilt head is to be discarded at the end of its service life, ask a specialized contractor to dispose of it properly.
- With some lenses mounted on the camera, focusing and other operations may be performed in the opposite direction.
  To ensure that these operations are performed in the correct direction, change the DIRECTION setting of the pan-tilt head controller (such as the AW-RP655).
- If an auto-focusing lens is not going to be used, use the auto focus (AF)/extender (EXT) selector switch (SW1: No.1) on the AW-PH405 at the OFF setting.
  If this switch is set to ON and the EXT (AF) button on the pan-tilt head controller (such as the AW-RP655) is also set to ON, it will not be possible to control the focusing.

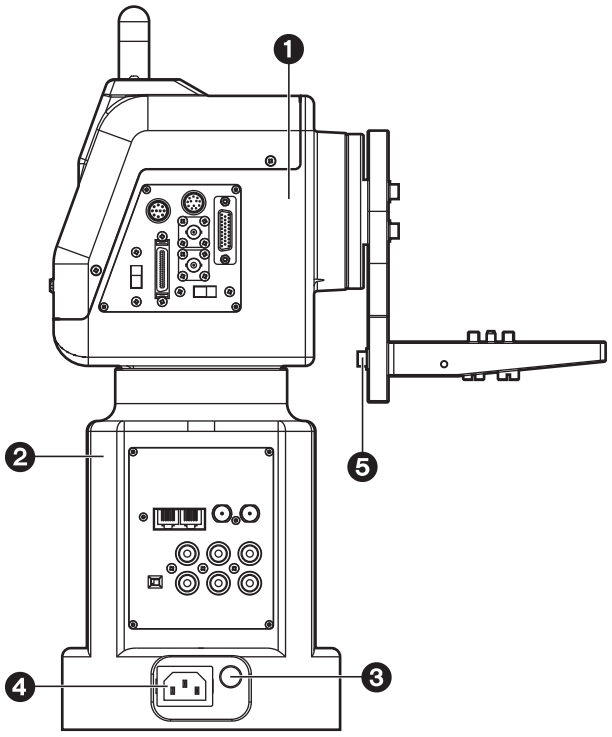
Accessories

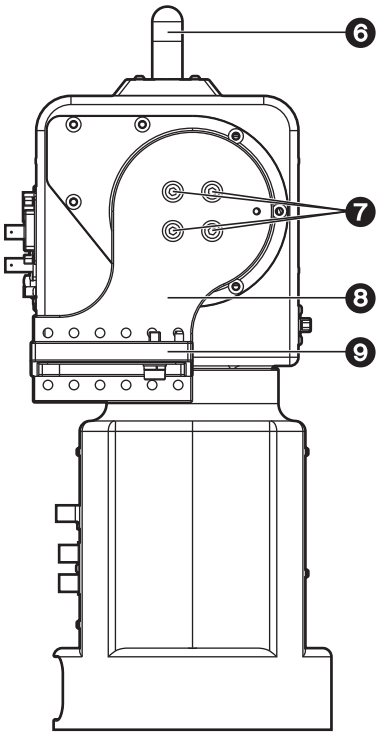
Operating instructions 1
Rotary arm 1
Camera mounting base 1
Mounting screws for the rotary arm and camera mounting base
(with flat washers, spring washers)
M5×22 mm 7
Camera cable 1
Tally lamp 1
Tally mounting screws (M3×6 mm) 2
Blank panel for tally 1
Wire mounting screws
(with flat washers, spring washers)
M4×8 mm 2
Inch screw 1
Hexagon key wrench 1
AC cable 2
Anti-camera-drop wire 1

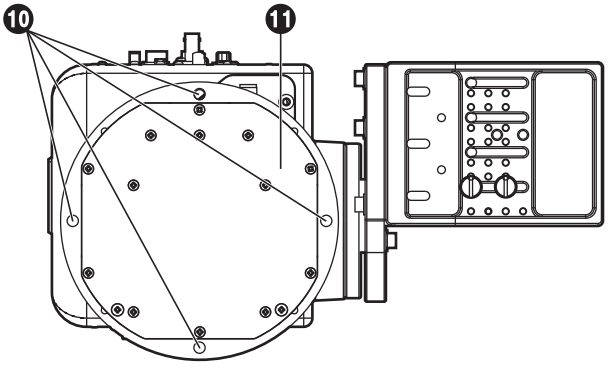
Installation precautions

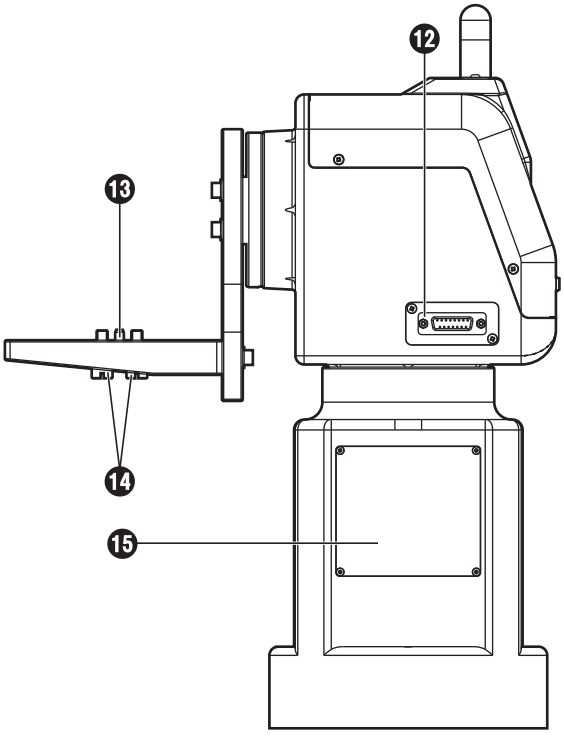
- Do not install the unit on any of its sides.
- Avoid using the unit in the kitchen and other locations with lots of steam and oily vapors.
- Mount the camera on the pan-tilt head only when you have finished installing it.
- The maximum weight which can be borne by this unit is 33.1 lbs (15 kg).
- Do not use a lens which will impair or upset the unit's balance.
  Even if the weight by the unit is less than 33.1 lbs (15 kg), it cannot be used if the unit will be set off-balance by the lens mounted on it.
- Do not install the unit outdoors or in places where the temperature will be hotter than 113°F (45°C) or colder than 23°F (–5°C).
  Use the unit in places where the humidity is below 90%.
- Obtain separately the screws which will be used to install the unit since they are not provided with the unit.
- Do not hold or lift the unit by its rotating part. Doing so may cause malfunctioning.
- Do not connect a regular LAN line or telephone line to the CONTROL IN RP connector or COM connector on the unit. Doing so may cause malfunctioning.
- When performing work high off the floor or ground, make absolutely sure that the work is done by a qualified contractor.
- Do not turn the unit's rotating part by hand. Doing so may cause malfunctioning.
- Dropping the unit or subjecting it to strong impact may give rise to malfunctioning.
- Leave a clearance of at least 3.3 ft (1 meter) from around the monitor when installing the unit.
- When mounting the camera on the unit, take sufficient steps to ensure that it will not become detached from the unit or fall onto the floor.
- A length of wire for preventing the camera from dropping is provided. Read the operating instructions first, and then be absolutely sure to attach the wire and take the necessary measures to prevent the camera from falling.
- Install the unit in such a way that the equipment mounted on it and its cables will not come into contact with anything when the pan-tilt head swivels, and set definite movement limits.
  (For details on the limiter settings, refer to the operating instructions of the controller.)
- When the unit is no longer going to be used, do not leave it in place, and be absolutely sure to remove it.

Parts and their function









Parts and their function

❶ Rotary head
This rotates in the horizontal direction.

❷ Pedestal

❸ POWER ON/OFF switch
Where a switch is pushed in, the unit's power is turned on, and the unit's power is turned off after the switch has jumped out.

❹ AC inlet [AC IN] (AC 3-point inlet)
Connect the accessory AC power cable to this inlet.

❺ Camera mounting base mounting screws
M5×22 mm hexagon socket head screws (with flat washers, spring washers) (3 of each provided as accessories)
These parts are used to secure the camera mounting base to the rotary arm.

❻ Tally lamp (accessory)
This is lighted up red by the selected signals.

❼ Rotary arm mounting screws
M5×22 mm hexagon socket head screws (with flat washers, spring washers) (4 of each provided as accessories)
These parts are used to secure the rotary arm to the rotary head.

❽ Rotary arm
This rotates in the vertical direction.

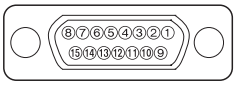
❾ Camera mounting base
Mount the convertible camera or multi-purpose camera on this base.

❿ Pan-tilt head mounting holes
These four holes are used when installing the pan-tilt head.

⓫ Bottom panel
Use the unit with this panel in position.

⓬ PROMPTER connector
The prompter is connected to this connector.
The maximum current which can be supplied from the DC 12 V OUT socket is 2.5 A.
When the prompter is connected, the pan-tilt head's speed is reduced to about one-third.
When connecting the prompter, be absolutely sure to short-circuit the DETECT terminal (Pin No.14) and the GND terminal (Pin No.15).

Note
- Consult your dealer when a prompter is to be installed since it will be necessary for the balance between the mounting fixture and overall weight and other aspects to be checked.



Pin layout as seen facing the prompter connector

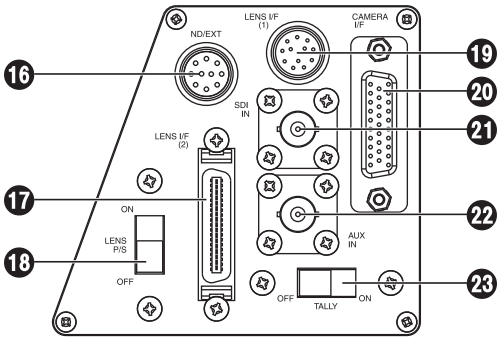
Pin No.		Signal Name
1		– – –
	9	– – –
2		PROMPTER VIDEO
	10	PROMPTER VIDEO GND
3		– – –
	11	– – –
4		DC 12 V OUT
	12	– – –
5		GND
	13	– – –
6		– – –
	14	DETECT
7		– – –
	15	GND
8		– – –

⓭ Guide pin
Use this to determine the direction in which the camera is to be mounted.

⓮ Camera mounting screws (U1/4" 20UNC)
These are used to secure the camera firmly after it has been mounted.

⓯ Side blank panel
For normal operation, use the unit with this panel in position.

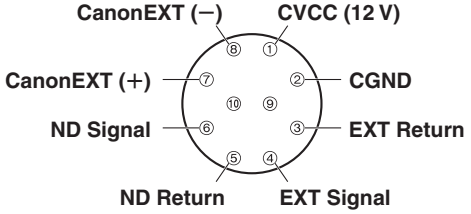
Parts and their function



Rotary head connector panel

⑯ ND/EXT connector [ND/EXT]

This is for the control of the ND filter and lens extender of the motorized lens unit.
Connect this connector when using a motorized lens unit with ND filter and lens extender functions. The cable described in “Cable specifications” on page 26 is required in order to connect this connector.



(Pin layout as seen from cable end)

The current rating of the CVCC and CGND pins is 500 mA (max). Any devices whose maximum current consumption exceeds 500 mA cannot beused.

⑰ LENS I/F (2) connector [LENS I/F (2)]

This is used when an IAS, WAS or VAS lens made by Canon or an RD lens made by Fujinon is to be used.
The optional connecting cable is required to connect the lens with the connector.
The current rating of LENS I/F (2) connector is 500 mA (max).
The lens whose maximum current consumption exceeds 500 mA cannot be used. Concerning the maximum current consumption of the lens, contact the lens manufacturer.

Lens	Cable
Canon	
Digital	AW-CA4DLZG
Analog	AW-CA4ALZG
Fujinon	AW-CA4FLZG

Note
- Refer to the instructions for using the connecting cable to ensure that it is connected properly.

⑱ LENS P/S ON/OFF switch [LENS P/S]

When this is set to ON, power is supplied to the lens from the LENS I/F (1) connector. When it is set to OFF, power is no longer supplied to the lens from the LENS I/F (1) connector.
Set this switch to OFF when power is to be supplied from a source outside the unit without using the AW-PH405’s dedicated camera cable.

⑲ LENS I/F (1) connector [LENS I/F (1)]

This is used to control the zooming and focusing of the motorized lens unit.
Use the motorized lens unit’s remote (zoom/focus) control cable to make the connection.

⑳ CAMERA I/F connector [CAMERA I/F]

This is used for the control of the convertible camera.
Use the camera cable supplied with the AW-PH405 to connect the connector with the REMOTE connector on the camera.
Depending on the functions of the optional card, a special camera cable (sold separately) is required.

㉑ SDI IN connector [SDI IN]

Use a coaxial cable to connect this to the SDI OUT connector on the AW-PB504 SDI card or other card installed in the convertible camera.

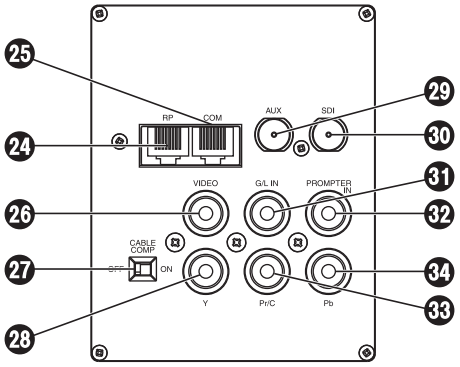
㉒ AUX IN connector [AUX IN]

This connector is connected using a BNC coaxial cable to the SDI OUT connector on the AW-PB504 SDI card or other card installed in the convertible camera or to the VBS connector on the AK-HDC1500G down converter board or other board installed in the AK-HC1500G multi-purpose camera.

㉓ TALLY OFF/ON switch [TALLY]

When this is set to ON, the tally lamp is lighted by the selected signals. When it is set to OFF, the (❻) tally lamp will not light even if the selected signals are supplied.

Parts and their function



Pedestal connector panel

㉔ CONTROL IN RP connector [RP]

This is the connector for the control of signals of the camera and pan-tilt head.
It is connected to the TO PAN/TILT HEAD connector on the AW-RP655 multi-function controller and AW-RP555 multi hybrid control panel.
Use a 10BASE-T (equivalent to UTP category 5) straight cable for the connecting cable.

㉕ COM connector [COM]

This is the connector for the control signals used to extend the camera's functions.

㉖ VIDEO connector [VIDEO]

This the output connector for the convertible camera's video signals.
It is connected to the Y/VIDEO connector on the AW-RC400 cable compensation unit or monitor, etc.
Use a BNC coaxial cable for the connecting cable.

㉗ CABLE COMP OFF/ON switch [CABLE COMP]

When this is set to ON, signals which have been cable compensated for the equivalent of 1640 ft (500 meters) are output from the VIDEO connector and the Y, Pr and Pb connectors.
When this switch is used in conjunction with the AW-RC400 cable compensation unit, the video cable can be extended up to a maximum of 3281 ft (1000 meters).

㉘ Y connector [Y]

This is the output connector for the camera's video signals.
It is connected to the Y/VIDEO connector on the AW-RC400 cable compensation unit or monitor, etc.
Use a BNC coaxial cable for the connecting cable.

㉙ AUX connector [AUX]

This is the output connector for the camera's video signals.
It enables the SDI signals, VBS signals, etc. from the BNC coaxial cable connected to AUX IN to be output.
Provide a BNC coaxial cable as the connecting cable.
No cable compensation is provided for the signals which are output from this connector.

㉚ SDI connector [SDI]

This is the output connector for the camera's video signals.
It enables the SDI signals, VBS signals, etc. from the BNC coaxial cable connected to SDI IN to be output.
Provide a BNC coaxial cable as the connecting cable.
No cable compensation is provided for the signals which are output from this connector.

㉛ G/L IN connector [G/L IN]

This is the genlock signal input connector.
It is connected to the G/L OUT connector on the AW-RC400 cable compensation unit or other unit.
Use a BNC coaxial cable for the connecting cable.

㉜ PROMPTER IN connector [PROMPTER IN]

The video signals for the prompter are input to this connector.
Use a BNC coaxial cable for the connecting cable.

㉝ Pr/C connector [Pr/C]

This is the output connector for the camera's video signals.
It is connected to the Pr/C connector on the AW-RC400 cable compensation unit or monitor, etc.
Use a BNC coaxial cable for the connecting cable.

㉞ Pb connector [Pb]

This is the output connector for the camera's video signals.
It is connected to the Pb connector on the AW-RC400 cable compensation unit or monitor, etc.
Use a BNC coaxial cable for the connecting cable.

Installation

■ Assembling the pan-tilt head

When assembling the pan-tilt head, use the Allen key (provided) and screwdriver, and secure the head by tightening the screws firmly. After mounting the pan-tilt head, check there is no play in its installation.

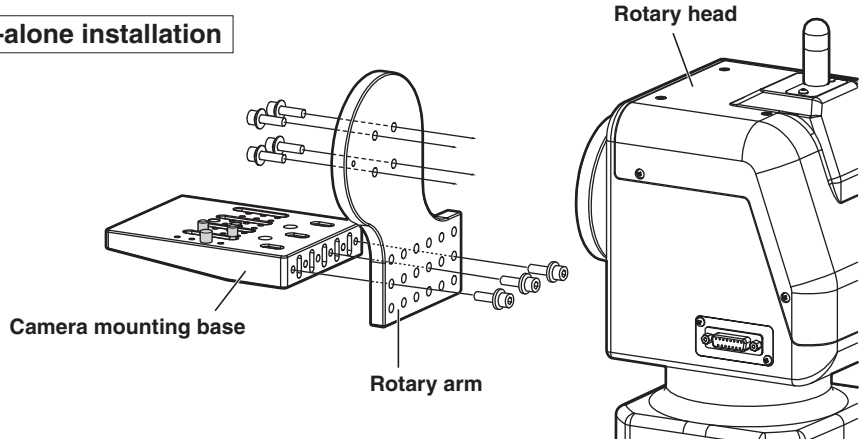
①Attaching the camera mounting base

Attach the camera mounting base to the rotary arm using the three mounting screws (M5×22 mm, with flat washers, spring washers) provided. The installation direction differs depending on how the base is installed.

②Attaching the rotary arm

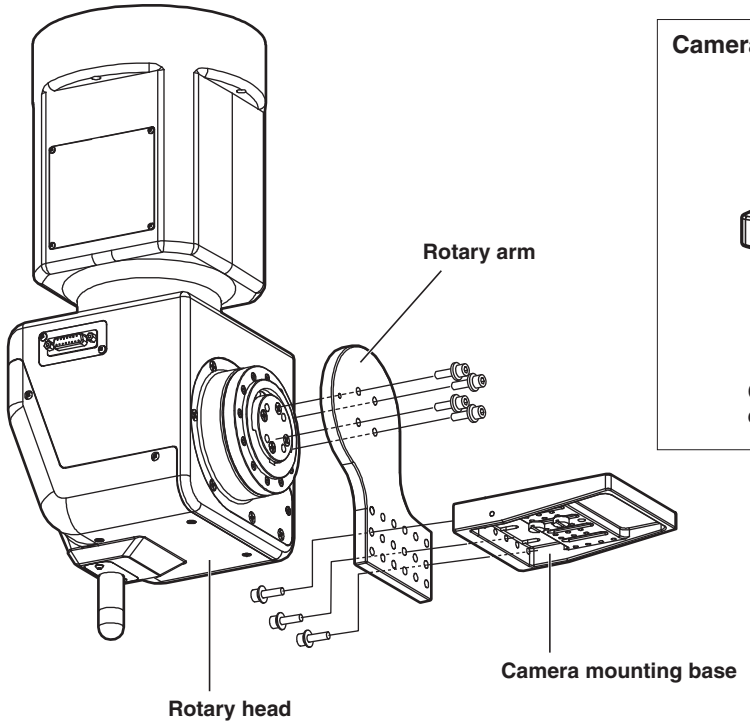
Attach the rotary arm to the rotary head using the four mounting screws (M5×22 mm, with flat washers, spring washers) provided. The installation direction differs depending on how the arm is installed.

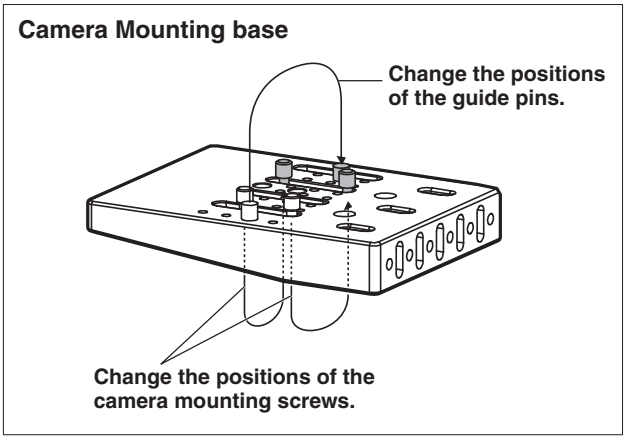
For a stand-alone installation



For installation on the ceiling

Change the guide pin and screw positions as shown in the figure below on the right, and then attach the camera mounting base to the rotary arm.



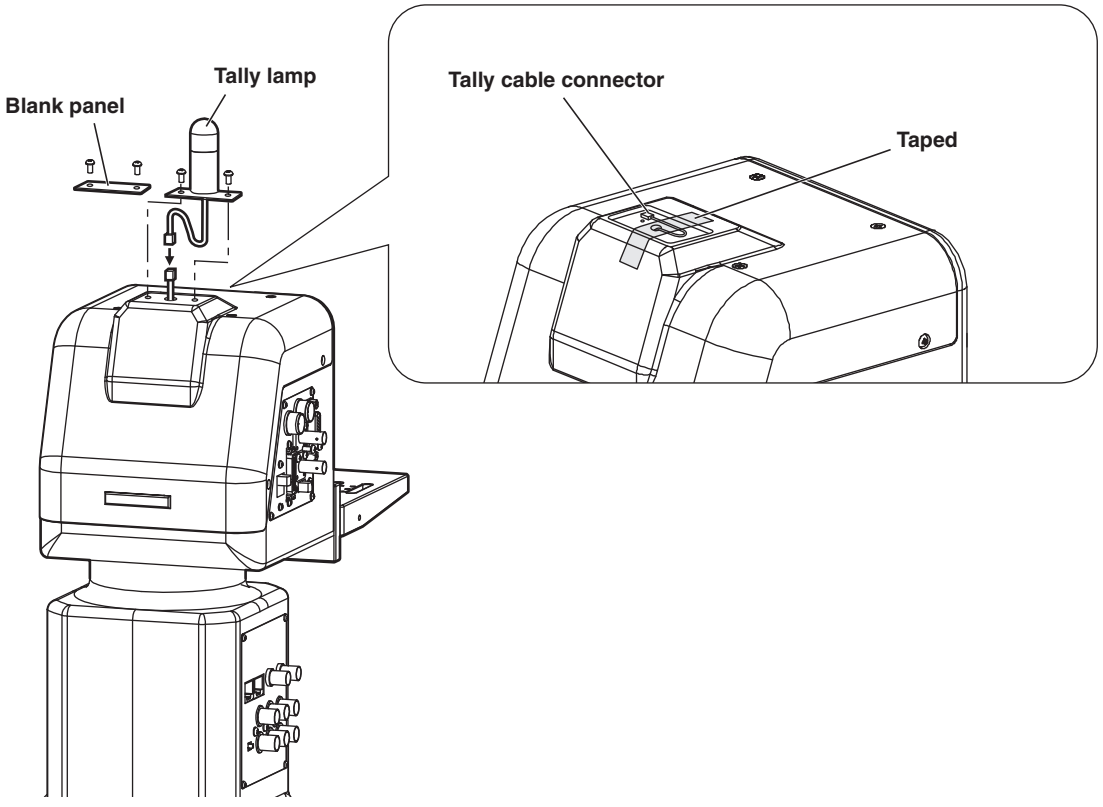


③ Mounting the tally lamp

Connect the cable connector which is taped to the top of the pan-tilt head to the tally cable connector.
Mount the tally lamp on the top of the pan-tilt head using the two screws provided.
Mount the lamp while paying attention to the wire.

The cable for the tally cable connector is about 2-1/16” (50 mm) long.
When connecting the cable to the connector, do not pull it out beyond this length.

If the tally lamp is not going to be used, insert the cable which is stuck to the top of the pan-tilt head inside the pan-tilt head, and attach the blank panel for the tally lamp using the two screws provided.



Note	• Tighten up the screws securely to ensure that they will not come loose during use.

■ Concerning the safety modes

This unit comes with two safety modes which are designed to safeguard the user and others from injury and to prevent damage to the pan-tilt head.

1. Mode for ensuring safety in the case of collisions

When the rotary arm of the pan-tilt head or some other unit installed on the head keeps colliding with an obstruction or a person (approx. 6 seconds when the head rotates at 45 degrees per second), the mode for ensuring safety in the case of collisions is established.

In this mode, only the rotation of the head in the direction of the collision is stopped.

❉ In the case of a low-speed collision, it will take longer for the safety mode to be established.

<Procedure for restoration from the safety mode>

The mode for ensuring safety in the case of collisions is released by bringing the joystick of the pan-tilt head controller (such as the AW-RP655) back to its center position.

❉ A poor weight balance may cause the mode for ensuring safety in the case of collisions to be established. Depending on the prevailing conditions, it may be necessary to adjust the balance, in which case consult your dealer.

2. Mode for ensuring safety in the case of trouble

When the pan-tilt head has detected trouble, the mode for ensuring safety in the case of trouble is established.

In this mode, the up/down and left/right rotation of the head is stopped.

<Procedure for restoration from the safety mode>

The mode for ensuring safety in the case of trouble is released by first pressing the POWER ON/OFF switch to turn off the power and then by pressing the switch again to turn the power back on.

❉ If the mode for ensuring safety in the case of trouble is established frequently, it may mean that the pan-tilt head is malfunctioning. Consult your dealer.

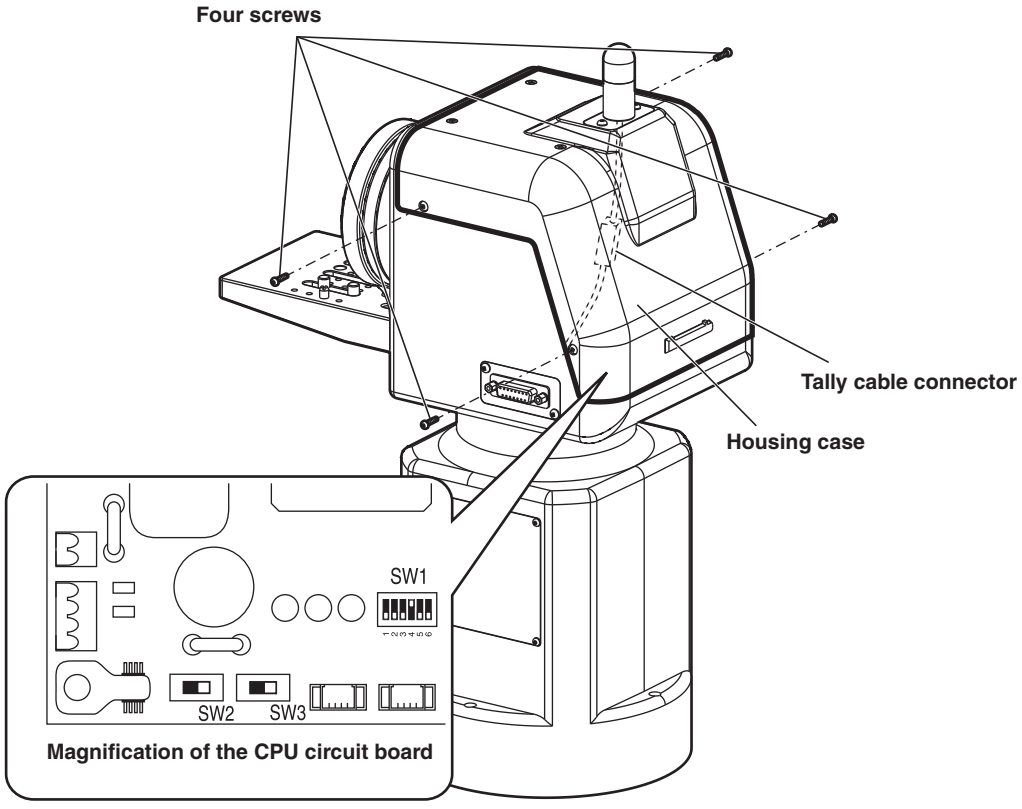
■ Procedure for changing the settings of the CPU circuit board switches

Follow the steps below to change the settings of the CPU circuit board switches.

① Remove the four screws, and gently remove the housing case.

② Disconnect the tally cable connector.

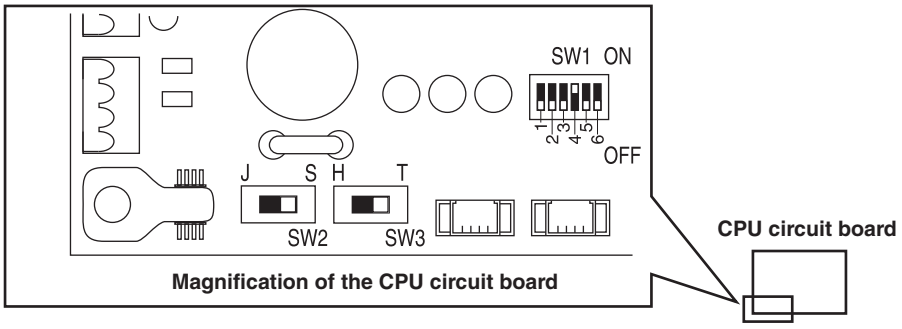
③ Set the switches on the CPU circuit board.
After you have performed the settings, connect the tally cable connector, and then return the housing case to its original position, and attach it using the screws. (Take care to ensure that the wiring is not pinched.)



Note	• Be absolutely sure to turn off the power before changing the position of this switch.

Installation

■ Setting the CPU circuit board switches



①Setting SW1

These switches are used to set the operations of the AW-PH405. Before changing their settings, make sure that the power has been turned off.

No.1: Auto focus (AF)/extender (EXT) selector switch.
Use this at the ON position when using an auto focus lens which is connected to the LENS I/F (1) connector; use it at the OFF position when using a lens with a motorized extender connected to the ND/EXT connector.

No.2: Diagonal operation selector switch. Set this to ON to use the diagonal operation capability; set this to OFF to stop using the diagonal operation capability.
The DIAGONAL MOTION menu setting can be changed from the AW-RP655 or other controller only when the diagonal operation selector switch is at the ON position.

No.3: Tilt range selector switch. The tilt range is 300 degrees at ON and 190 degrees at OFF.
Settings can be changed from a personal computer or other external device only when the tilt range selector switch is at the ON position.

No.4: Zoom offset automatic compensation switch of the lens which is connected to the LENS I/F (2) connector. This is normally kept at the ON position for use.
Use this switch at the OFF position when zooming manually using the zoom seesaw switch of the lens.
When the zoom offset automatic compensation selector switch of the lens is set to ON, the zoom position will be automatically compensated. For this reason, the zoom seesaw switch of the lens cannot be used to control the zoom in the desired manner.

No.5, 6: These switches are not used. Do not change their factory settings.

No.	Functions	ON	OFF
No.1	Auto focus (AF)/extender (EXT) selector	AF	EXT (factory settings)
No.2	Diagonal operation ON/OFF selector	The diagonal operation capability: ON (factory settings)	The diagonal operation capability: OFF
No.3	Tilt range 300 degrees/190 degrees selector	300° (factory settings)	190°
No.4	Zoom offset automatic compensation ON/OFF switching	Automatic compensation: ON (factory settings)	Automatic compensation: OFF
No.5	Not used (used by the service technician)	–	(factory settings)
No.6	Not used (used by the service technician)	–	(factory settings)

- **Concerning the zoom offset automatic compensation function**
  In the case of a lens which does not detect the control voltage used by the pan-tilt head to stop the zooming, a difference in potential from the pan-tilt head side may arise, causing the zoom position to shift even when zoom control is not exercised from the pan-tilt head controller (such as the AW-RP655). To prevent this phenomenon from occurring, the zoom offset automatic compensation function works to automatically compensate the control voltage used by the pan-tilt head to stop the zooming.

②Setting the landing characteristics

When changing the landing characteristics, set the switch as follows:

Soft landing: Set SW2 to its right position (S). (factory settings)
Just landing: Set SW2 to its left position (J).

③Setting the installation direction switch

For a ceiling installation, set the switch as follows:

Stand-alone installation: Set SW3 to its right position (T). (factory settings)
Installation on the ceiling: Set SW3 to its left position (H).

Note • Be absolutely sure to turn off the power before changing the position of this switch.

Installation

■ Pan-tilt head mounting conditions

Pan-tilt head weight	Mounting specifications	Compatible cameras	Camera weight	Camera anti-drop measures	Compatible lenses	Lens weight	Cable weight	Total weight
Approx. 22 lbs (10 kg)	Stand-alone installation or installation on the celling	Convertible camera series AW-E350 AW-E650 AW-E655 AW-E750 AW-E860	Approx. 2.6 lbs (1.2 kg) max.	Wire provided used for mounting	AW-LZ16MD55P AW-LZ16MD73P AW-LZ17MD9AG	Approx. 2.9 lbs (1.3 kg) max.	Approx. 0.7 lbs (0.3 kg)	Approx. 28.7 lbs (13 kg)
		Multi-purpose camera series AK-HC1500G	Approx. 3.3 lbs (1.5 kg)		HA21 series HA22 series HJ17e series HJ21e series	Approx. 7.1 lbs (3.2 kg) max.		Approx. 33.1 lbs (15 kg)

Mounting the pan-tilt head	
Recommended screws	**No. of screws**
M6 screws (hexagonal nuts)	4 pcs

Notes
- Refer to the above table for the total weight of the pan-tilt head with the camera, lens, cables and any other accessories installed.
  Install the equipment on an installation surface which is capable of ensuring a drop safety equivalent to five times the figure for the total weight.
- The maximum weight of the units which can be installed on the pan-tilt head is 33.1 lbs (15 kg) or so [or approximately 55.1 lbs (25 kg) total for the weight of the pan-tilt head and weight of the units installed on the head]. When mounting the pan-tilt head on which units have been installed, be sure to mount it on an installation surface which is itself capable of ensuring a satisfactory drop safety.

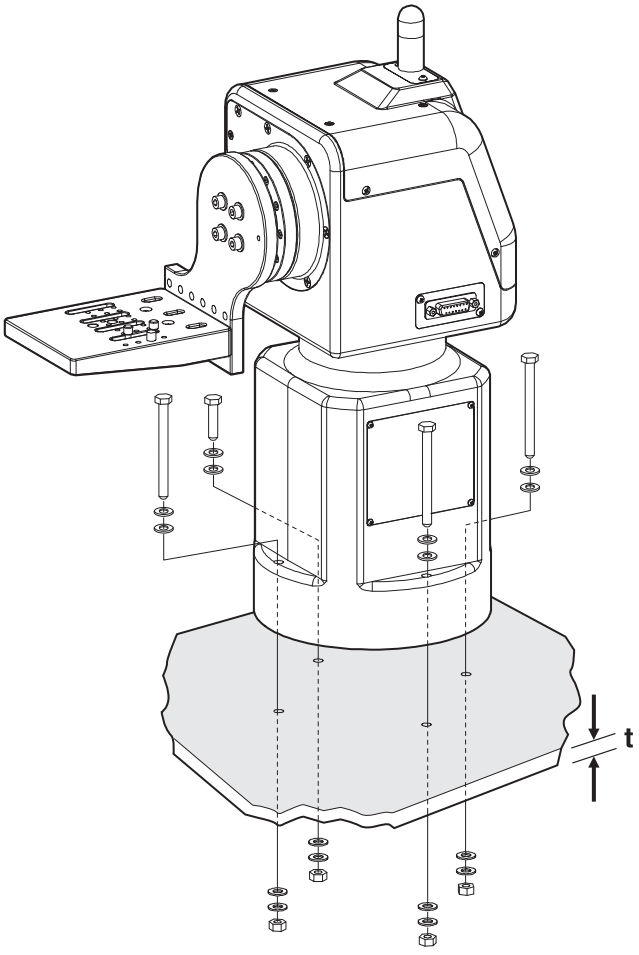
■ Installing the pan-tilt head

Before installing the pan-tilt head, check that the above mounting conditions are satisfied, and observe the following precautions. In order to prevent accidents resulting when the product becomes dislodged or falls down, be absolutely sure to proceed as instructed. Do not install the pan-tilt head on its side since its prescribed operation and performance cannot be ensured.

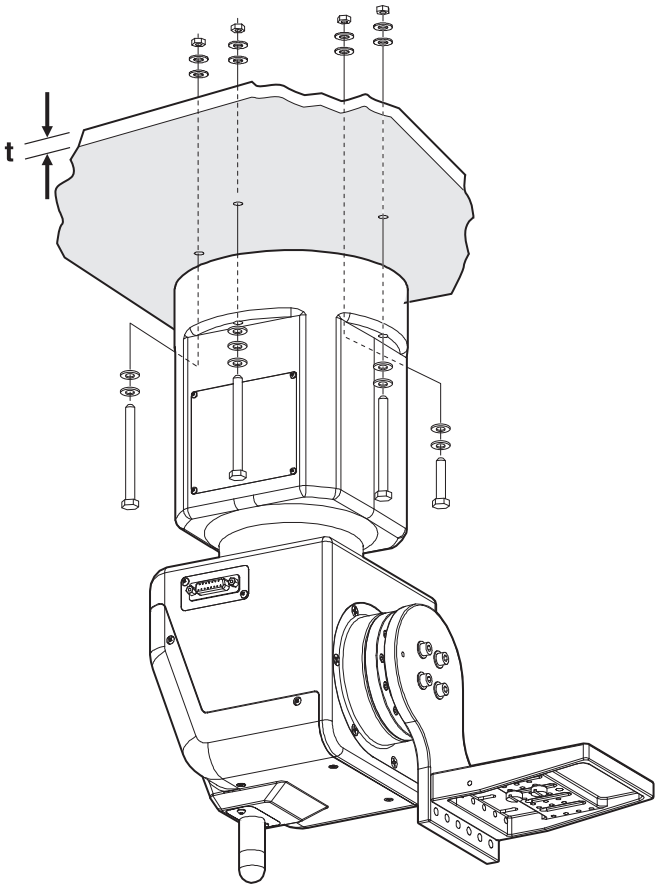
- After the pan-tilt head has been installed, mount the camera on it.
- When installing the pan-tilt head, use the four mounting holes to secure the pan-tilt head firmly.
- Ensure that the surface on which the pan-tilt head will be installed and the anchor bolts used are sufficiently strong.
- Use the M6 hexagon head bolts (including one short bolt) for installation.
- Use hexagon head bolts which are longer than the thickness (t) of the mounted member + 1” (25 mm).
- As shown in the figure of next page, use flat washers, spring washers and hexagon nuts for the hexagon head bolts.
- Use a wrench of the appropriate size to tighten up the hexagon head bolts.
- Provide a wire which is strong enough to support the combined weight of the entire pan-tilt head system (which consists of the pan-tilt head, camera, lens and cable).
- Do not use a surface made of plaster board or wood as this kind of installation surface will not be strong enough. If mounting on such a surface is unavoidable, take sufficient anti-drop measures.
- Install the pan-tilt head in such a way that the equipment and cable attached to it will not make contact with any surrounding objects when the head is swiveled.
- When the unit is no longer going to be used, do not leave it in place, and be absolutely sure to remove it.

Installation

For a stand-alone installation



For installation on the ceiling



Note

- When installing the pan-tilt head, do not forcibly turn the rotary head or rotary arm manually. Doing so may result in malfunctioning.

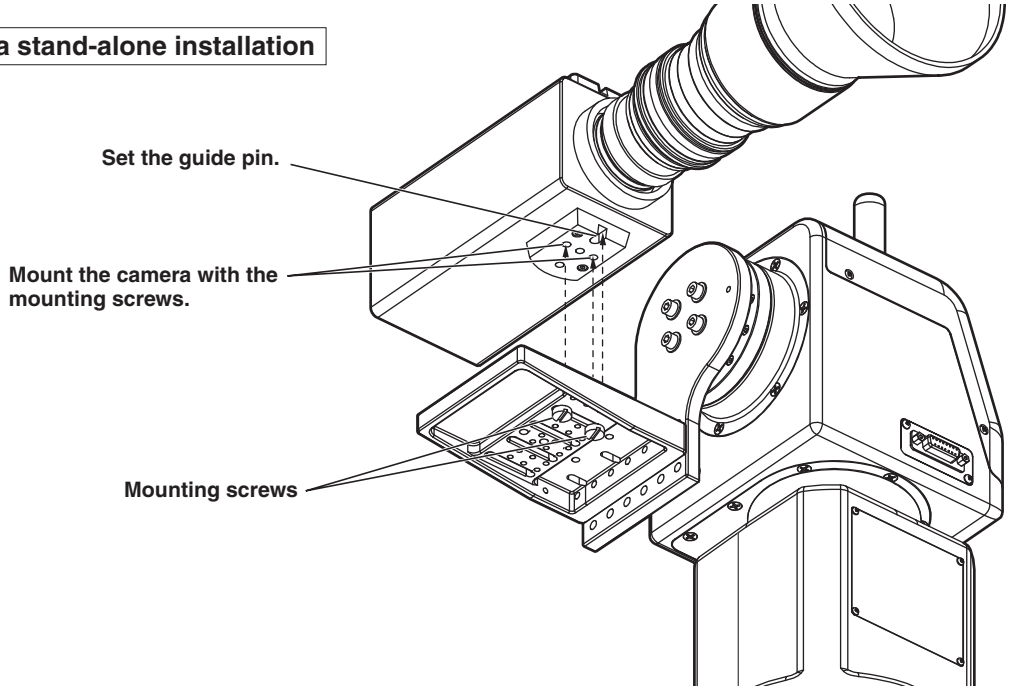
Installation

■ Mounting the camera
[Convertible camera AW-E350/E650/E655/E750/E860]

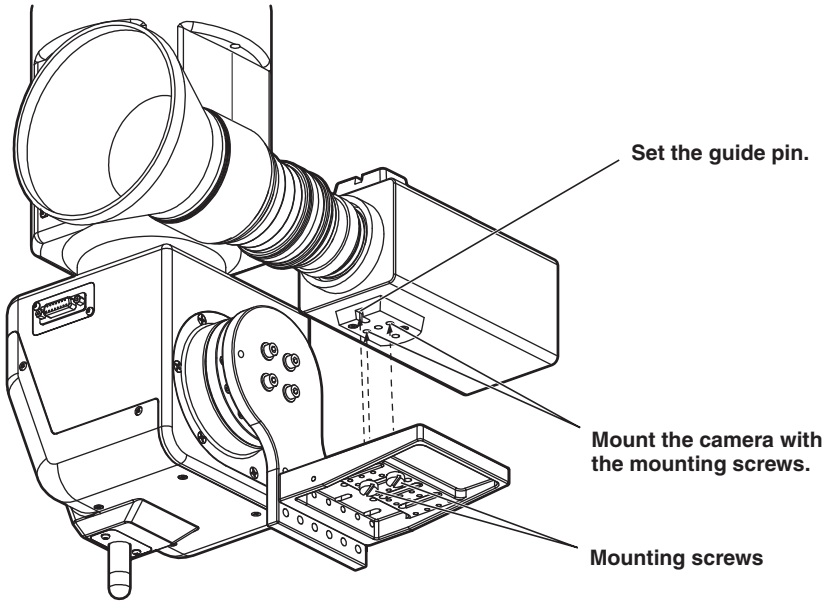
When mounting the camera, take sufficient care to ensure that the camera will not come off or fall down.

① Mount the lens onto the convertible camera.
(Before mounting a large lens, consult with your dealer.)
② Mount the convertible camera after aligning it with the guide pins.
Use a tool to tighten up the mounting screws so that they are securely tightened.

For a stand-alone installation



For installation on the ceiling



<Recommended lenses>

Camera	Lens
AW-E350	AW-LZ16MD55P AW-LZ10MD6
AW-E650 AW-E655	AW-LZ16MD73P AW-LZ16AF7G
AW-E750 AW-E860	AW-LZ17MD9AG

- Be absolutely sure to use a screwdriver or other tool to tighten the two camera mounting screws so that the camera is secured firmly.
- After the camera has been mounted, check that there is no play in the way it was mounted.

Installation

■ Attaching the wire

[Convertible camera AW-E350/E650/E655/E750/E860]

The camera comes with a wire for preventing the camera from dropping. Follow the instructions below to use it to couple the camera to the pan-tilt head.

When mounting the cameras with fan (AW-E655, AW-E750, AW-E860)

① Use the wire mounting screw (M4×8 mm with flat washer and spring washer) to attach one end of the wire to the pan-tilt head's arm.

② Mount the mounting spacer on the top panel of the camera. (The mounting spacer is provided with the camera as an accessory.)

③ Use the wire mounting screw (M4×8 mm with flat washer and spring washer) to attach the other end of the wire to the screw hole of the mounting spacer.

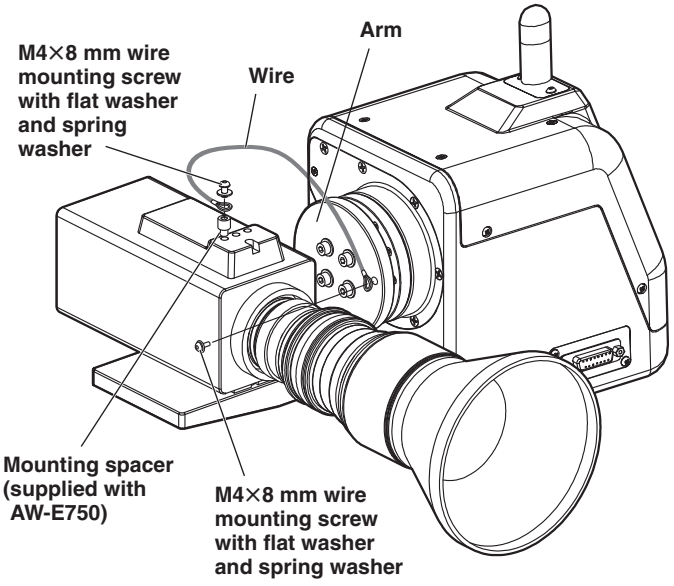
When mounting the cameras without fan (AW-E350, AW-E650)

① Use the wire mounting screw (M4×8 mm with flat washer and spring washer) to attach one end of the wire to the pan-tilt head's arm.

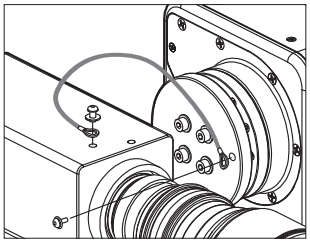
② Use the wire mounting screw (M4×8 mm with flat washer and spring washer) to attach the other end of the wire to the screw hole of the top panel of the camera.

For a stand-alone installation

- **Camera: AW-E750**

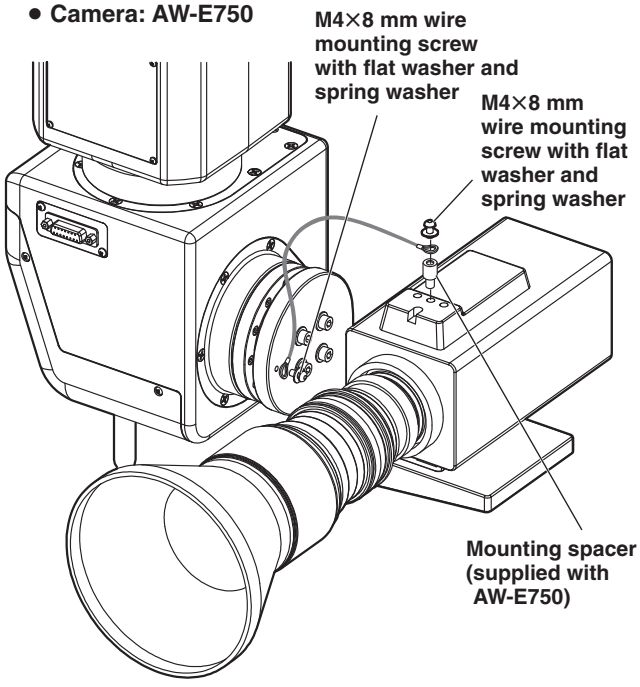

Arm
M4×8 mm wire mounting screw with flat washer and spring washer
Wire
Mounting spacer (supplied with AW-E750)
M4×8 mm wire mounting screw with flat washer and spring washer

- **Camera: AW-E350, AW-E650**

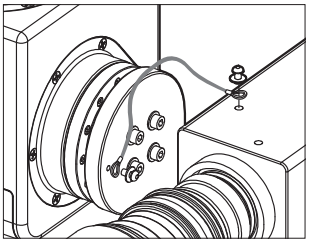


For installation on the ceiling

- **Camera: AW-E750**


M4×8 mm wire mounting screw with flat washer and spring washer
M4×8 mm wire mounting screw with flat washer and spring washer
Mounting spacer (supplied with AW-E750)

- **Camera: AW-E350, AW-E650**



- Be absolutely sure to tighten up the mounting spacer and screws securely using a tool such as a screwdriver.

Installation

■ Mounting the camera
[Multi-purpose camera AK-HC1500G]

When mounting the camera, take sufficient care to ensure that the camera will not come off or fall down.

① Mount the lens onto the multi-purpose camera.

(1) Lenses that can be used

• Use any of the portable lenses which are listed below.

Fujinon	HA18, HA21, HA22 series
Canon	HJ17e, HJ21e series

(2) Lenses that cannot be used

• Do not use the large-sized lenses [with a weight of 11 lbs (5 kg) or more and a length of 15-3/4" (400 mm) or more] with the model numbers which are listed below since when they are mounted on the camera, the camera's overall balance will be upset.

Fujinon	HA42 series
Canon	HJ40 series, J35 series

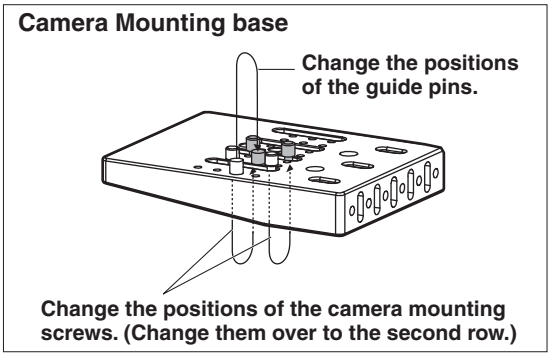
Note

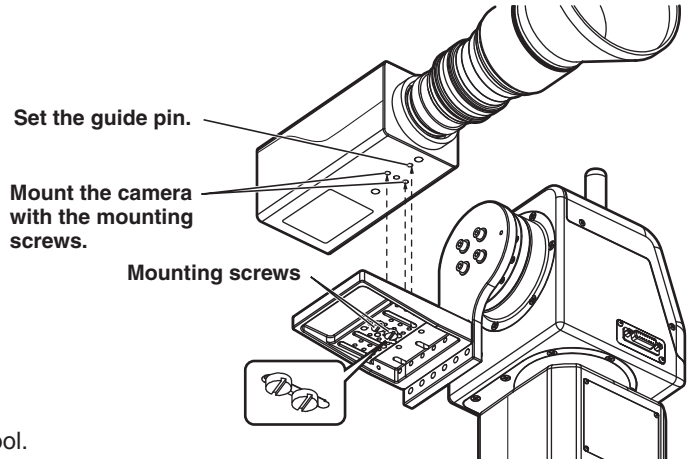
- The current rating of LENS I/F (2) connector is 500 mA (max).
  Even with the lenses in a series which can be used, any lens whose maximum current consumption exceeds 500 mA cannot be used.
  Concerning the maximum current consumption of the lens, contact the lens manufacturer.

② Align the multi-purpose camera with the guide pins and mount it.
Change the positions of the guide pins and screws of the camera mounting base as shown in the figure below, and then attach the camera mounting base to the rotary arm.

③ Do not use the rubber piece.

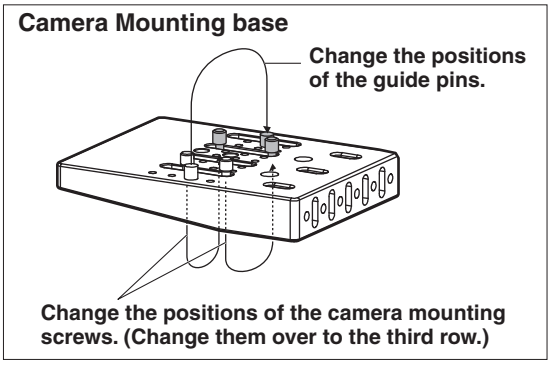
For a stand-alone installation

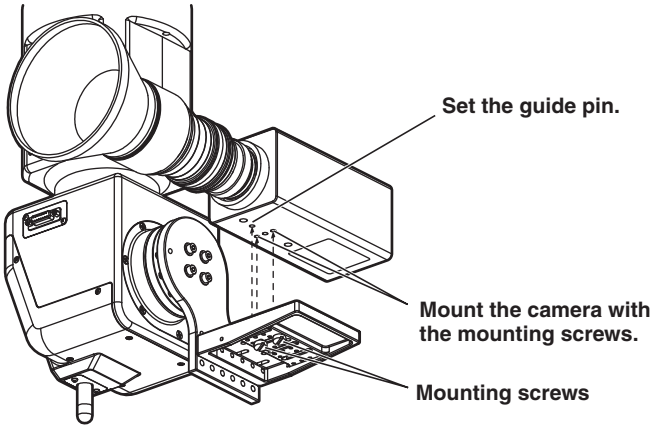

Camera Mounting base
Change the positions of the guide pins.
Change the positions of the camera mounting screws. (Change them over to the second row.)



- Tighten up the two mounting screws securely using the tool.

For installation on the ceiling


Camera Mounting base
Change the positions of the guide pins.
Change the positions of the camera mounting screws. (Change them over to the third row.)



- Just as for a convertible camera, change the positions of the guide pins and screws of the camera mounting base as shown in the figure above, and then attach the camera mounting base to the rotary arm.

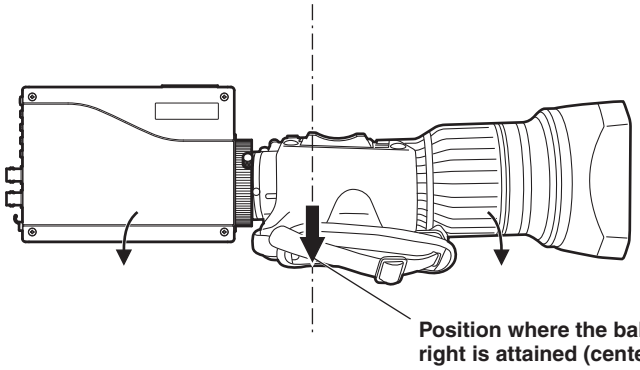
Installation

■ Concerning the balance of the installed unit

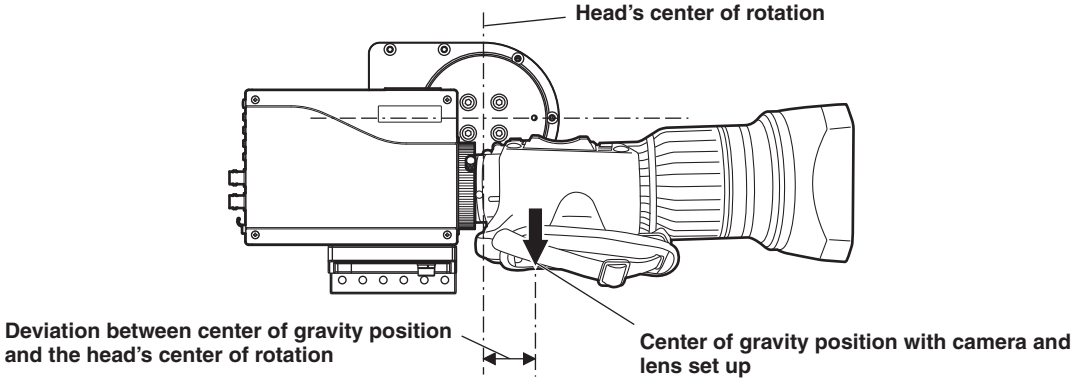
The weight balance may be impaired when the pan-tilt head is used in combination with a camera and long lens.
Follow steps ① to ③ below to check the balance, and then mount the camera. If, after this, the balance is still impaired and operations cannot be performed smoothly, it means that the balance must be adjusted. Consult your dealer.

How to obtain the balance

① Check the center of gravity position with the camera and lens set up on the pan-tilt head.

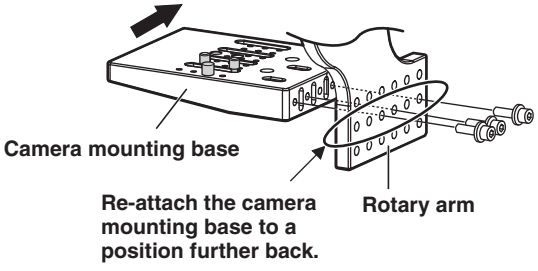


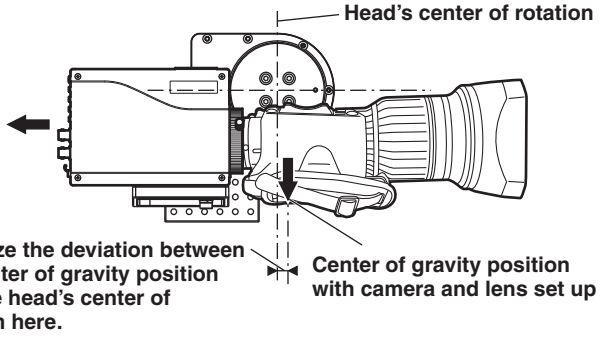
② The less the deviation between the center of gravity position and the head's center of rotation, the more the balance is attained. Check these positions when mounting the pan-tilt head.


Head's center of rotation
Deviation between center of gravity position and the head's center of rotation
Center of gravity position with camera and lens set up

③ If the proper balance cannot be attained in steps ① and ②, re-attach the camera mounting base and rotary arm to shift the position of the entire camera so that the center of gravity position is brought closer to the head's center of rotation.
When doing this, bear in mind the following points.

(1) Depending on the specifications of the lens and its installation direction, the protruding parts of the lens or grip area may come into contact with the rotary arm or other parts, in which case do not re-attach the camera mounting base and rotary arm.
(2) If the protrusion of the connectors from the camera makes contact with the mounting surface of the pan-tilt head, insert a spacer as described on the next page between the pan-tilt head and mounting surface or set the limiters.
(3) Be absolutely sure to secure the camera mounting base and rotary arm firmly using the three screws.

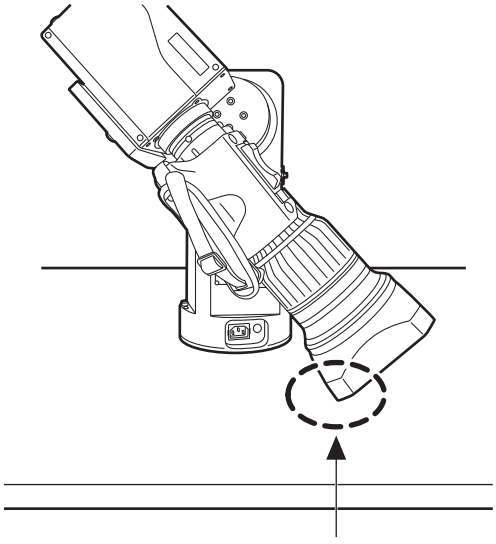



Head's center of rotation
Minimize the deviation between the center of gravity position and the head's center of rotation here.
Center of gravity position with camera and lens set up

Installation

Precautions for mounting the camera

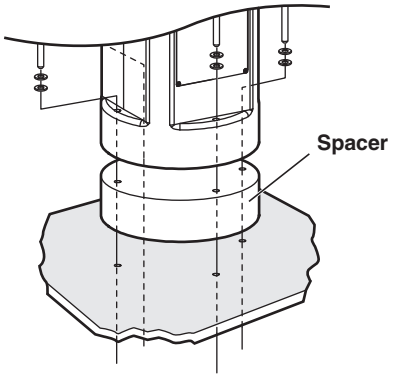
① Bearing in mind the length of the lens, set the movement range of the pan-tilt head using the limiters in such a way that the hood at the edge of the lens will not come into contact with the surface on which the pan-tilt head is installed when the pan-tilt head is tilted.



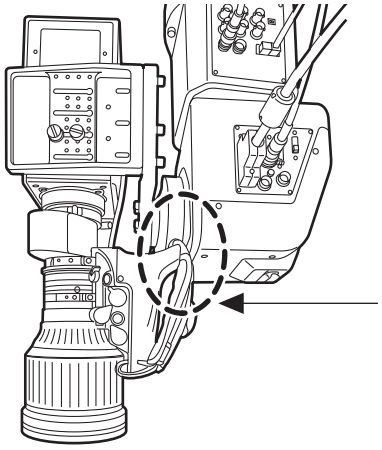
Lens must not come into contact with mounting surface.

Note

- To point the lens any further straight down in a stand-alone installation, insert a spacer between the pan-tilt head and mounting surface to raise the pan-tilt head position.
  Make sure that the spacer has a strong enough construction. Also ensure that the mounting bolts used are long enough.



② When the pan-tilt head is installed on the ceiling, contact with the pan-tilt head body may be made by the protrusion of the drive unit when tilting operations are performed. For this reason, set the limiters before proceeding with the installation work.



Protrusion of drive unit must not come into contact with pan-tilt head body.

③ Do not tie the connected lens cable and camera cable together as a bundle. During operation, excessive strain may be placed on cables which have been bundled together. Instead, be absolutely sure to tie them separately.

- Be absolutely sure to use a screwdriver or other tool to tighten the two camera mounting screws so that the camera is secured firmly.
- After the camera has been mounted, check that there is no play in the way it was mounted.

Installation

■ Attaching the wire

[Multi-purpose camera AK-HC1500G]

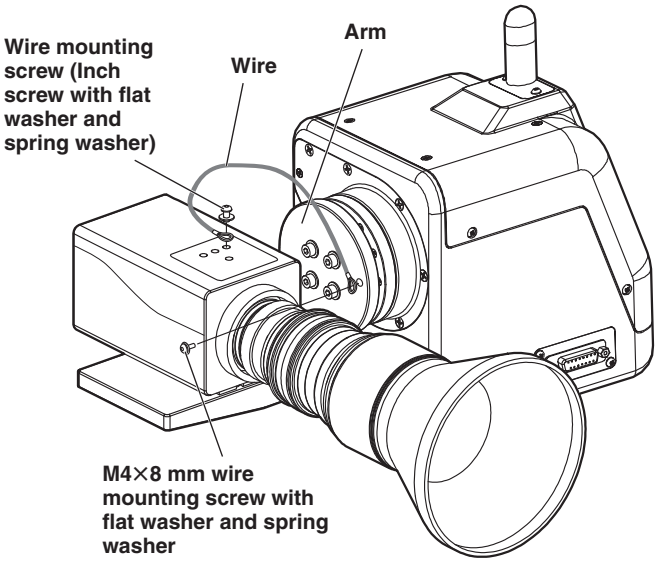
The camera comes with a wire for preventing the camera from dropping. Follow the instructions below to use it to couple the camera to the pan-tilt head.

① Use the wire mounting screw (M4×8 mm with flat washer and spring washer) to attach one end of the wire to the pan-tilt head's arm.

② Use the wire mounting screw (Inch screw with flat washer and spring washer) to attach the other end of the wire on the top panel of the camera.

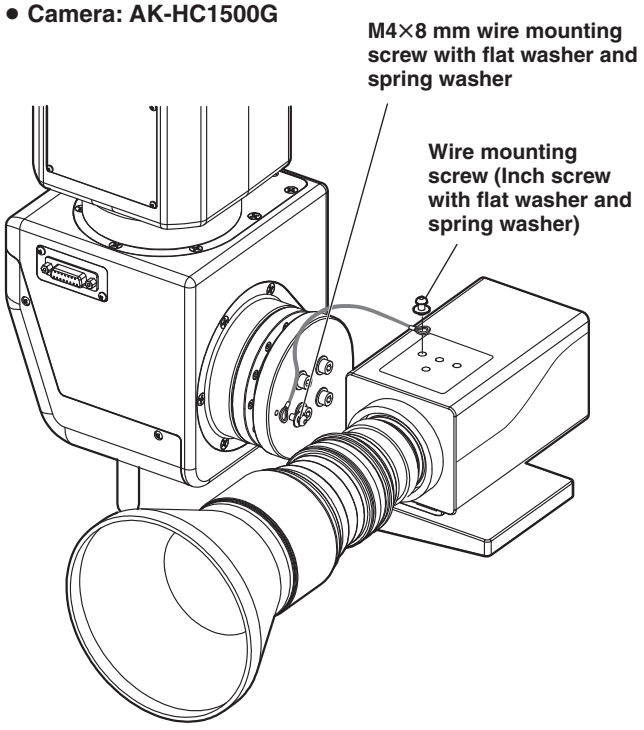
For a stand-alone installation

- **Camera: AK-HC1500G**


Wire mounting screw (Inch screw with flat washer and spring washer)
Wire
Arm
M4×8 mm wire mounting screw with flat washer and spring washer

For installation on the ceiling

- **Camera: AK-HC1500G**

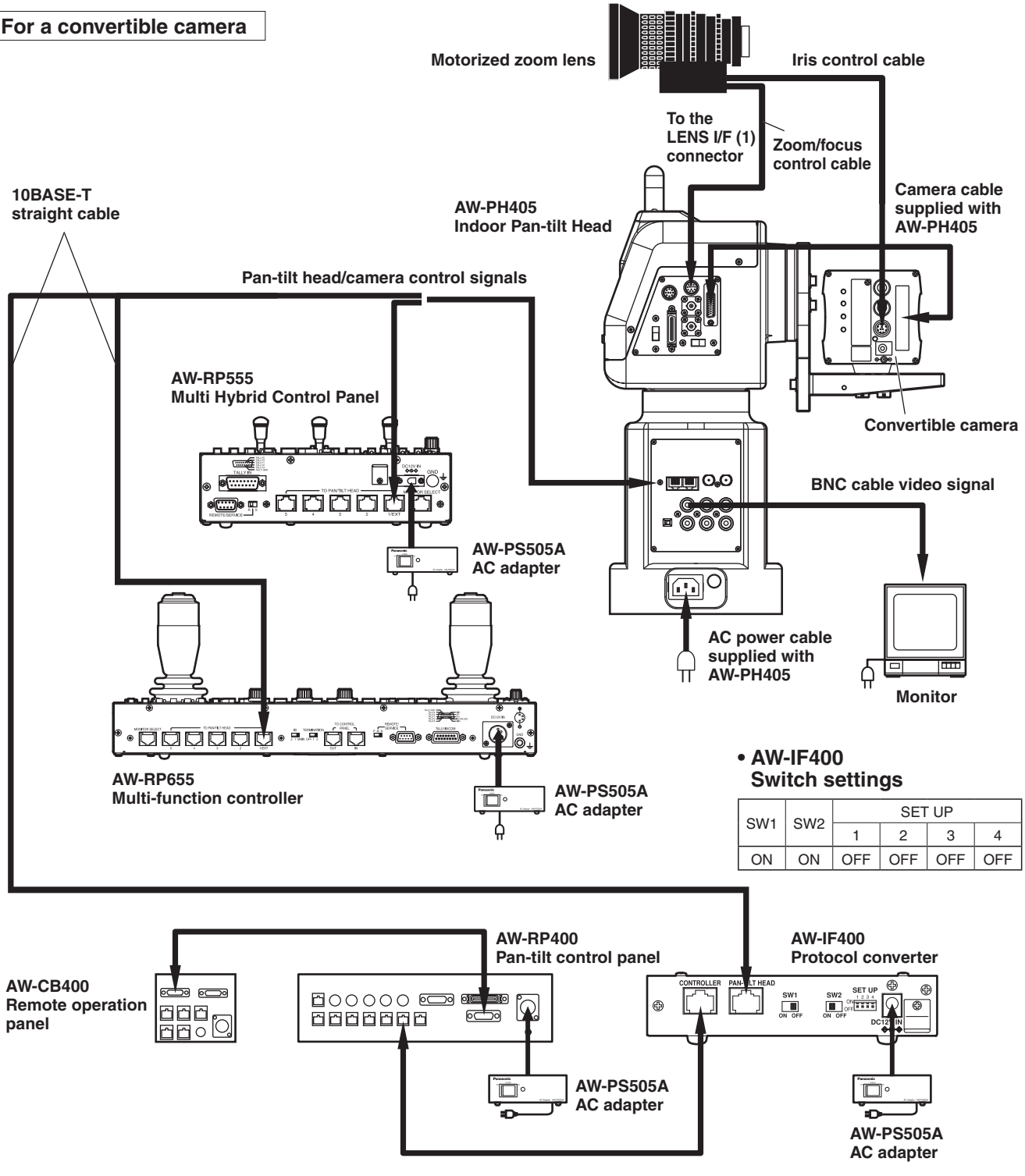

M4×8 mm wire mounting screw with flat washer and spring washer
Wire mounting screw (Inch screw with flat washer and spring washer)

- Be absolutely sure to tighten up the screws securely using a tool such as a screwdriver.

Connections

- Turn off the power of all the equipment before proceeding with the connections.
- Connect the AC power cable supplied with the AW-PH405 for the AW-PH405 indoor pan-tilt head.
- Use 10BASE-T straight cables to connect the RP connectors on the pan-tilt heads with the CONTROL OUT TO PAN/TILT HEAD (1 to 5) connectors on the AW-RP655 multi-function controller and AW-RP555 multi hybrid control panel. The maximum extension distance is 3281 ft (1000 meters) when using UTP category 5 cables or their equivalent.
- Use the camera cables supplied with the pan-tilt head to connect the AW-PH405 to the convertible camera.
- Connect the iris control cable of the motorized zoom lens to the IRIS connector on the camera, and connect the zoom/focus cable to the LENS I/F (1) connector on the pan-tilt head.

For a convertible camera



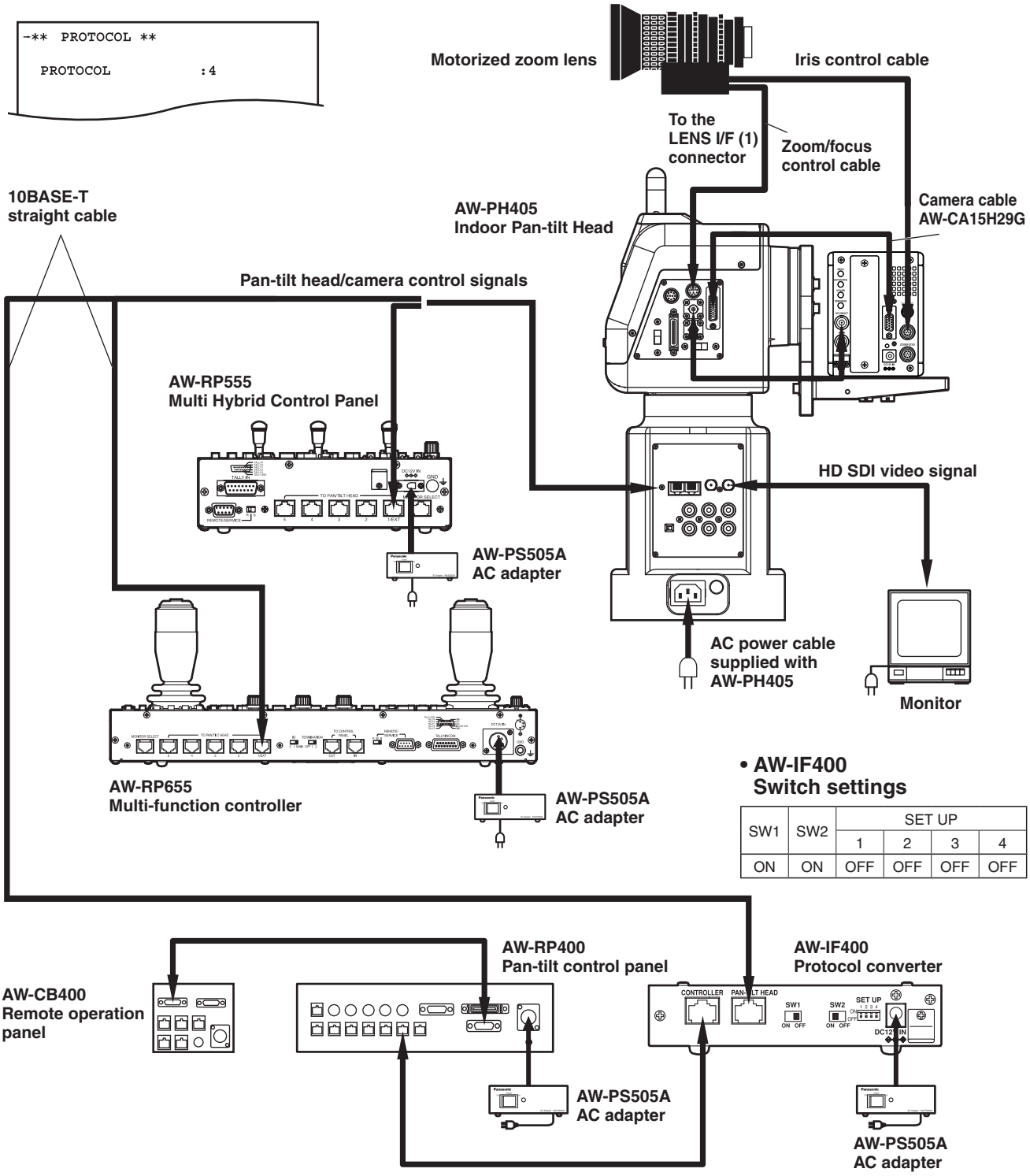
• AW-IF400 Switch settings

SW1	SW2	SET UP			
		1	2	3	4
ON	ON	OFF	OFF	OFF	OFF

Connections

For the AK-HC1500G

Note • Set the menu items to protocol 4.



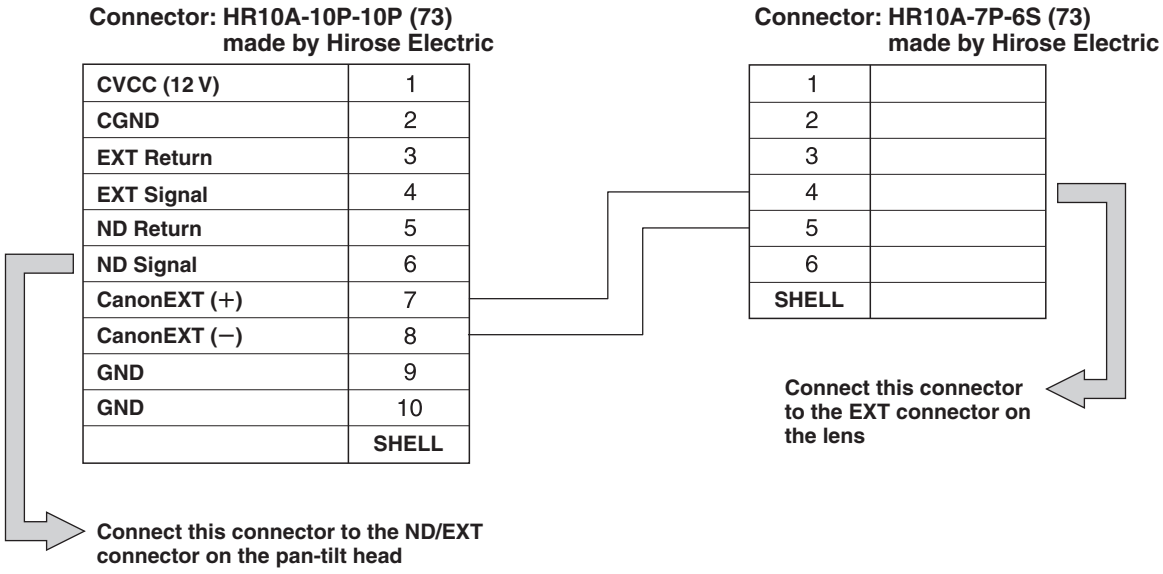
• AW-IF400 Switch settings

SW1	SW2	SET UP			
		1	2	3	4
ON	ON	OFF	OFF	OFF	OFF

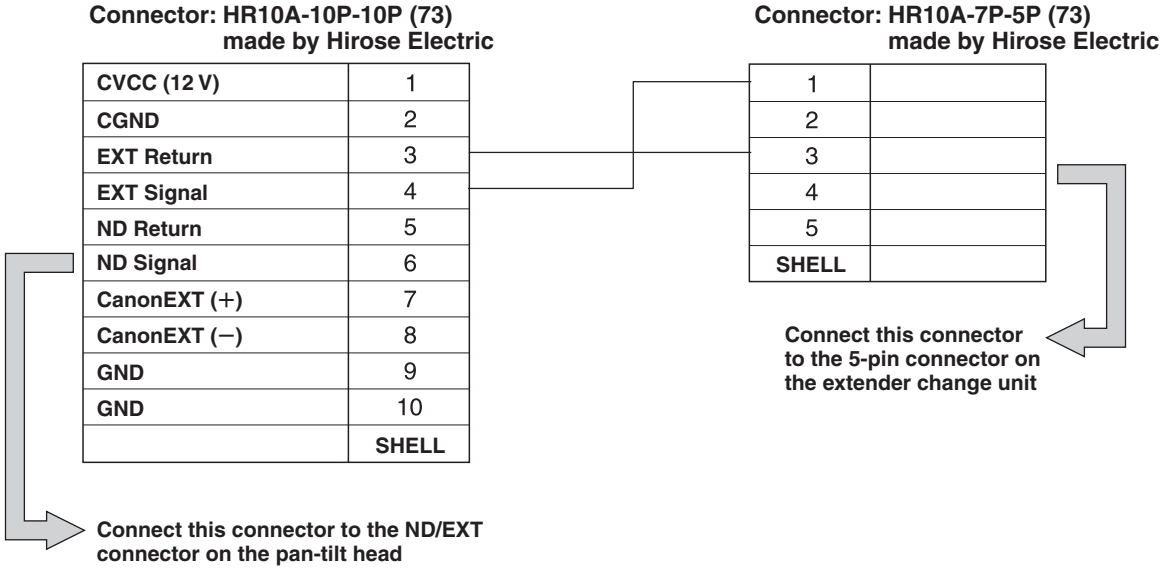
- Use the connecting cables below to connect the pan-tilt head and camera.
  AW-CA15H29G
- Refer to the operating instructions for using the connecting cable to ensure that it is connected properly.

Cable specifications

When connecting a Canon lens with motorized extender unit



When connecting a Fujinon extender change unit



- For details on how to connect the extender change unit to the lens, consult the information provided by the manufacturer of the lens.

Replacing the consumable parts

■ Replacing the motor

Replace the motor when it ceases to operate properly.
For details on the motor replacement, consult your dealer.

■ Replacing the belt

Replace the belt when the preset stop accuracy has deteriorated.
For details on the belt replacement, consult your dealer.

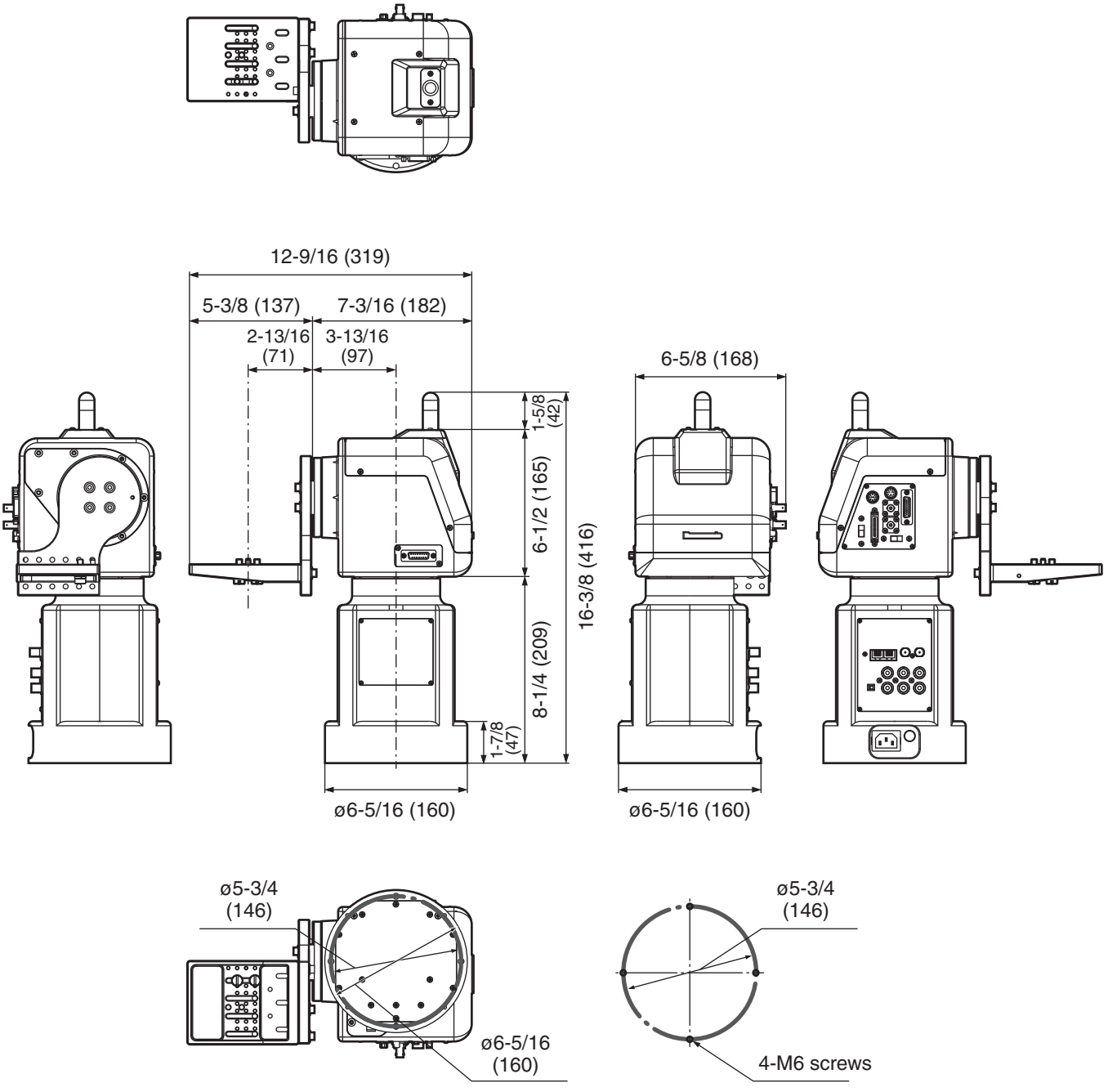
■ Replacing the gear

Replace the gear when the preset stop accuracy has deteriorated.
For details on the gear replacement, consult your dealer.

The motor, gear and belt are consumables.
They need to be replaced at periodic intervals.
As a general guideline, replace them when the cumulative total time for all the rotation operations reaches 3,000 hours.

Appearance

Unit: inch (mm)



<Mounting hole specifications>

Specifications

Supply voltage:	AC 120 V, 60 Hz
Power consumption:	120 W

▭ indicates safety information.

Genlock input:	BNC Black burst or composite video signal, Tri Sync
Prompter input (PROMPTER IN):	BNC Through output to PROMPTER connector
Prompter output (PROMPTER OUT):	D-SUB 15-pin
Camera video output	
VIDEO:	BNC, 75-ohm output
Y:	BNC, 75-ohm output
Pr/C:	BNC, 75-ohm output
Pb:	BNC, 75-ohm output
SDI:	BNC
AUX:	BNC
Camera, pan-tilt head control:	RJ45, RS-422, pan-tilt head control signal output
RP	Connecting cable: 10BASE-T straight cable (equivalent to UTP category 5), max. 3281 ft (1000 meters)
Functions/performance:	Maximum weight capacity: 33.1 lbs (15 kg) Tilt range: 300 degrees (approx. ±150 degrees) The tilt range is subject to restrictions depending on the cable and lens of camera to be mounted on pan-tilt head. Pan range: 300 degrees (approx. ±150 degrees) Maximum operating speed: 45 degrees/sec. (when the center of gravity of the units installed on the pan-tilt head has been aligned with the head's center of rotation) (Maximum operating speed with prompter mounted: 15 degrees/sec.) Stop accuracy: ±3´ Noise level: Less than NC35 (at less than 30 degrees/sec.)
Ambient operating temperature:	23°F to 113°F (–5°C to +45°C)
Storage temperature:	–4°F to 149°F (–20°C to +65°C)
Ambient operating humidity:	30% to 90% (no condensation)
Dimensions (W×H×D):	12-9/16"×16-3/8"×6-5/8" (319×416×168 mm)
Weight:	Approx. 22 lbs (10 kg)
Finish:	AV ivory paint (color resembling Munsell 7.9Y6.8/0.8)

Weight and Dimensions indicated above are approximate.
Specifications are subject to change without notice.

Memo

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